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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,387	01/22/2002	Jeffrey C. Burnham	38934.0008	7016

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EXAMINER
CLARDY, S

ART UNIT	PAPER NUMBER
1616	

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
10/051,387	Jeffrey
Examiner	**Art Unit**
S. Mark Clardy	1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Aug 14, 2002*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-69* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-69* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claims 1-69 are pending in this application which claims the benefit under 35 USC 119(e) of US Provisional Applications No. 60/272,469, filed March 2, 2001, and 60/262,631, filed January 22, 2001. International application PCT/US02/01511 claims priority to the same provisional applications.

Applicant's claims are drawn to:

1. A biosolid granule comprising at least one layer (claims 41-60), or which is a multilayered delayed release granule (claims 1-22 and 27), in which the layer(s) may comprise various materials:
   a. inorganic compounds, polymeric materials, organic materials, fertilizers, polysaccharides, etc. (claim 5, 45),
   b. polymeric coating materials (claim 14, 51),
   c. micronutrients (claims 15-20, 52-57),
   d. microorganisms (claims 21, 58) which are useful for bioremediation (claims 22, 59),
   e. toxins (claim 27, 60) such as pesticides, herbicides, insecticides (method claim 32, 69);
2. Methods of bioremediation (claims 23-26, 61-67);
3. Methods of fertilization or pesticidal use (claims 28-32, 34, 68, 69);
4. Methods of non-specific delayed release (claims 33, 35-37);
5. Methods of making the granules (claims 38-40).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 10, 13, 43, 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is internally contradictory in reciting "non-biosolid material" which comprises "class A biosolids". Further, it is unclear from the specification exactly what is encompassed by the term "class A biosolids" in claims 3 and 43. In claims 10 and 48, the term "Eh" has not been defined; it is unclear whether a definition has been provided in the specification. In claim 13, the term "encapsulating" in line 2 should read -- encapsulates --. In claim 39, it is unclear if the term "rotary hallow stem/trimmie placement" is correct.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20, 27-57, 60, 68, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Waldman et al (US 6,284,278, equivalent PCT: WO 98/56735), Diping et al (US 5,849,060), Cunningham (US 5,340,376), and Burger et al (DE 41 27 459).

Waldman et al teach controlled release compositions comprising water soluble granulated chemicals such as fertilizers, salts, pesticides which are coated in a thermoplastic biodegradable and inert polymer composition (abstract).

Diping et al teach controlled release fertilizer comprising a water-soluble fertilizer nucleus surrounded with plant nutrient coating layers with limited solubility (abstract).

Cunningham teaches controlled-release microbe nutrients, which are the same as those which are useful as plant nutrients (columns 5-6), which are surrounded with a controlled-release coating (columns 6-7). The compositions are especially useful in providing nutrients to bioremediation microbes (columns 7-8).

Burger et al teach fertilizer granules which are coated in multiple polymeric layers which control the release of the fertilizer materials.

One of ordinary skill in the art would be motivated to combine these references because they disclose the utility of layered granular compositions for providing controlled release of agricultural materials.

Thus it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have made granular materials comprising a core material (inorganic compounds, fertilizers, pesticides, micronutrients), surrounded by one or more layers that provide a controlled release of the encapsulated material.

Claims 21-26, 58, 59, and 61-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Rogers et al (US 6,465,706), Turtakovsky et al (US 6,051,4110, and Resnick (US 5,807,724).

Rogers et al teach a method of encapsulating microorganisms which are useful for bioremediation in a polymeric coating (columns 1-4).

Turtakovsky et al teach that microorganisms may be immobilized in a chitosan and lignosulfonate coating for use in bioremediation or purification of waste water.

Resnick teaches that petroleum hydrocarbon pollutants may be degraded with bioremediating microorganisms which are encapsulated in wax.

One of ordinary skill in the art would be motivated to combine these references because they disclose that microorganisms which are useful in bioremediation processes may be advantageously encapsulated.

Thus it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have coated bioremediating microorganisms in layered, encapsulated compositions because the prior art teaches that this was a known concept in the art of bioremediation.

No unobvious or unexpected results are noted; no claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is (703) 308-4550.

S. Mark Clardy
Primary Examiner
AU 1616

March 19, 2003